ABSTRACT

A reformate cooling system is provided for use in a fuel processing subsystem including a process water flow that supplies water to a fuel flow at various locations in the fuel processing subsystem. The reformate cooling system includes a heat exchanger capable of completely vaporizing a portion of the process water flow while bringing the reformate and the portion of the process water flow to a common exit temperature. The common exit temperature is dynamically controllable to a desired temperature range for optimal removal of carbon monoxide from the reformate flow. The portion of the process water flow is recombined with a remainder of the process water to be utilized as steam and/or water in the fuel processing subsystem.